

## WHAT IS CLAIMED IS:

## 1. A digital camera, comprising:

an image pick-up unit which captures images;  
a camera controller which controls said image pick-up unit so that a first image and a second image are captured by said image pick-up unit at predetermined intervals; and  
a matching processor which computes a matching between the first image and the second image, and which then outputs a matching result as a corresponding point file.

## 2. A digital camera, comprising:

an image pick-up unit which captures images;  
a camera controller which determines two images among images captured by said image pick-up unit, as a first image and a second image; and  
a matching processor which computes a matching between the first image and the second image, and which then outputs a matching result as a corresponding point file.

## 3. A digital camera, comprising:

an image pick-up unit which comprises a stereo view;  
a camera controller which controls said image pick-up unit so that a first image and a second image which constitute

a stereo image are captured by said image pick-up unit; and  
a matching processor which computes a matching between  
the first image and the second image, and which then outputs a  
matching result as a corresponding point file.

4. A digital camera according to Claim 1, further comprising  
an intermediate image generator which generates an  
intermediate image between the first image and the second  
image based on the corresponding point file.

5. A digital camera according to Claim 2, further comprising  
an intermediate image generator which generates an  
intermediate image between the first image and the second  
image based on the corresponding point file.

6. A digital camera according to Claim 3, further comprising  
an intermediate image generator which generates an  
intermediate image between the first image and the second  
image based on the corresponding point file.

7. A digital camera according to Claim 4, further comprising a  
display unit for displaying the first image, the second image  
and the intermediate image.

8. A digital camera according to Claim 5, further comprising a display unit for displaying the first image, the second image and the intermediate image.

9. A digital camera according to Claim 6, further comprising a display unit for displaying the first image, the second image and the intermediate image.

10. A digital camera according to Claim 4, further comprising a storage unit that stores the first image, the second image and the corresponding point file in a manner such that the first image, the second image and the corresponding point file are associated with one another.

11. A digital camera according to Claim 5, further comprising a storage unit that stores the first image, the second image and the corresponding point file in a manner such that the first image, the second image and the corresponding point file are associated with one another.

12. A digital camera according to Claim 6, further comprising a storage unit that stores the first image, the second image and the corresponding point file in a manner such that the first image, the second image and the corresponding point file

are associated with one another.

13. A digital camera according to Claim 1, wherein said matching processor computes the matching result by detecting points on the second image that correspond to lattice points of a mesh provided on the first image, and based on a thus detected correspondence determines a destination polygon in the second image corresponding to a source polygon of the mesh on the first image.

14. A digital camera according to Claim 2, wherein said matching processor computes the matching result by detecting points on the second image that correspond to lattice points of a mesh provided on the first image, and based on a thus detected correspondence determines a destination polygon in the second image corresponding to a source polygon of the mesh on the first image.

15. A digital camera according to Claim 3, wherein said matching processor computes the matching result by detecting points on the second image that correspond to lattice points of a mesh provided on the first image, and based on a thus detected correspondence determines a destination polygon in the second image corresponding to a source polygon of the mesh

on the first image.

16. A digital camera according to Claim 1, wherein said matching processor performs a pixel-by-pixel matching computation based on correspondence between a critical point detected through a two-dimensional search on the first image and a critical point detected through a two-dimensional search on the second image.

17. A digital camera according to Claim 2, wherein said matching processor performs a pixel-by-pixel matching computation based on correspondence between a critical point detected through a two-dimensional search on the first image and a critical point detected through a two-dimensional search on the second image.

18. A digital camera according to Claim 3, wherein said matching processor performs a pixel-by-pixel matching computation based on correspondence between a critical point detected through a two-dimensional search on the first image and a critical point detected through a two-dimensional search on the second image.

19. A digital camera according to Claim 16, wherein said

matching processor initially multiresolutionalizes the first image and the second image using the critical points then performs the pixel-by-pixel matching computation between related multiresolution levels while also inheriting a result of a pixel-by-pixel matching computation at a different multiresolution level, in order to acquire a pixel-by-pixel correspondence relation at a finest resolution level at a final stage.

20. A digital camera according to Claim 17, wherein said matching processor initially multiresolutionalizes the first image and the second image using the critical points then performs the pixel-by-pixel matching computation between related multiresolution levels while also inheriting a result of a pixel-by-pixel matching computation at a different multiresolution level, in order to acquire a pixel-by-pixel correspondence relation at a finest resolution level at a final stage.

21. A digital camera according to Claim 18, wherein said matching processor initially multiresolutionalizes the first image and the second image using the critical points then performs the pixel-by-pixel matching computation between related multiresolution levels while also inheriting a result

of a pixel-by-pixel matching computation at a different multiresolution level, in order to acquire a pixel-by-pixel correspondence relation at a finest resolution level at a final stage.

22. A digital camera according to Claim 1, further comprising a mode setting unit for setting a simplified motion picture shooting mode in said image pick-up unit.

23. A digital camera, comprising:

an image pick-up unit that acquires a first image and a second image; and

a matching processor that computes a matching between the first image and the second image,

wherein said matching defines a destination polygon on the second image which corresponds to a source polygon on the first image.

24. A digital camera, comprising:

an image pick-up unit which captures images;

a camera controller which controls said image pick-up unit so that a first image and a second image are captured by said image pick-up unit at predetermined intervals; and

a matching processor that computes a matching between

the first image and the second image and then outputs a matching result as a corresponding point file,

wherein said matching processor multiresolutionalizes the first image and the second image using critical points thereof to create a multiresolution hierarchy and then detects a correspondence relation between critical points starting from a coarser level in the multiresolution hierarchy and proceeding to finer levels to determine the matching hierarchy between the first image and the second image at a finest level in the multiresolution hierarchy.

25. A digital camera, comprising:

an image pick-up unit which captures images;

a camera controller which determines two images among the images captured by said image pick-up unit, as a first image and a second image; and

a matching processor which computes a matching between the first image and the second image and then outputs a matching result as a corresponding point file,

wherein said matching processor multiresolutionalizes the first image and the second image using critical points thereof to create a multiresolution hierarchy and then detects a correspondence relation between critical points starting from a coarser level in the multiresolution hierarchy and



proceeding to finer levels to determine the matching hierarchy between the first image and the second image at a finest level in the multiresolution hierarchy.

26. A digital camera, comprising:

an image pick-up unit which comprises a stereo view;  
a camera controller which controls said image pick-up unit so that a first image and a second image which constitute a stereo image are captured by said image pick-up unit; and  
a matching processor which computes a matching between the first image and the second image and then outputs a matching result as a corresponding point file,

wherein said matching processor multiresolutionalizes the first image and the second image using critical points thereof to create a multiresolution hierarchy and then detects a correspondence relation between critical points starting from a coarser level in the multiresolution hierarchy and proceeding to finer levels to determine the matching hierarchy between the first image and the second image at a finest level in the multiresolution hierarchy.